1625 Broadway
Suite 2200
Denver, Colorado 80202

Tel: 303.228.4000
Fax: 303.228.4280
www.nobleenergyinc.com

noble energy

CONFIDENTIAL BUSINESS INFORMATION

February 27, 2014

Via Certified Mail – Return Receipt Requested

Dana J. Stotsky
Senior Enforcement Attorney-Toxics
U.S. EPA Region 8, ENF-L
1595 Wynkoop Street
Denver, CO 80202

Re: Noble Energy, Inc.'s Reply to Follow-Up Questions Regarding Responses to Request for Information Pursuant to Section 114(a)(1) of the Clean Air Act, 42 U.S.C. § 7414(a)(1); Tank Batteries Located in Weld, Boulder, and Broomfield Counties of Colorado

Dear Mr. Stotsky:

Noble Energy, Inc. ("Noble") hereby provides the U.S. Environmental Protection Agency, Region 8 ("EPA") with its reply ("Reply") to the seven (7) follow-up questions and requests for clarification received from EPA via e-mail on January 27, 2014 and letter dated January 28, 2014. The questions relate to Noble's prior two (2) transmittals to EPA in response to EPA's August 1, 2013 above-referenced Request for Information ("Request") on November 27, 2013 and December 20, 2013 (collectively, "the Transmittals"). EPA provided Noble with a list of seven (7) follow-up questions related to the Transmittals as an "informal" process rather than a second 114(a)(1) Request for Information.

As you will recall, Noble's first transmittal on November 27, 2013 included a twenty-five (25) page response document that set forth Noble's General Objections, Objections to Definitions, Reservations of Rights and Defenses Regarding the EPA Workbook, Reservations of All Rights and Defenses, Specific Objections, Responses to Questions, Request for Confidential Business Information Status, and Statement of Certification ("Written Response Letter"). Noble hereby incorporates the Written Response Letter by reference as though fully set forth herein.

All documentation associated with this Reply is included on the enclosed compact disc ("CD"). As was the case with the Transmittals, the Reply and supporting documentation contain confidential business information and have been labeled as such. Please reference the Request for Confidential Business Information Status in the Written Response Letter for Noble's Confidential Business Information request and rationale.

CONFIDENTIAL BUSINESS INFORMATION

Finally, Noble would like to take this opportunity to update EPA on the status of the three (3) outstanding capture systems from the Request. As previously discussed, Noble is responding to the Request by way of multiple transmissions. The Transmittals included all required information for all systems covered by the Request, except for systems 21, 51, and 54. Systems 21 and 51 have resumed operational status and sampling has been conducted. With respect to system 54, the Evans Industrial Park #2 well has been plugged. Accordingly, Noble respectfully requests that EPA remove the Evans Industrial Park #2 well from the Request. Noble anticipates that it will be able to sample the remaining well at system #54, Evans Industrial Park #1, by the end of March. Noble intends to submit all required information for these three remaining systems in a final, single transmittal by May 1, 2014.

If you have any questions regarding this response, please contact Denee DiLuigi at (303) 228- 4251.

Sincerely,

[redacted]

Vice President, DJ Basin

Enclosure (CD)

cc: Denee A. DiLuigi, Esq., Noble
[redacted] Noble
[redacted], Noble
[redacted] Noble
Cindy Beeler, EPA
Andrew M. Gaydosh, EPA

Mr. Dana Stotsky
[DATE], 2014

CONFIDENTIAL BUSINESS INFORMATION

NOBLE ENERGY, INC.'S REPLY TO EPA'S FOLLOW-UP QUESTIONS REGARDING NOBLE'S RESPONSES TO EPA'S AUGUST 1, 2013 REQUEST FOR INFORMATION

Noble Energy, Inc. ("Noble") respectfully submits the following reply ("Reply") to U.S. Environmental Protection Agency, Region 8's ("EPA's") follow-up questions received via e-mail on January 27, 2014 and letter dated January 28, 2014 regarding its prior responses to EPA's Request for Information Pursuant to Section 114(a)(1) of the Clean Air Act ("Request"). Supporting documentation for the questions below, as appropriate, is included on the enclosed CD. The file names are provided in the answers to the questions below for ease of reference.

1. **Input data and calculation procedure used to determine the peak vapor flow due to flashing losses for both single-tank and multi-tank systems (Column Q of EPA Workbook.xlsx). Please provide sample calculations.**

A general description of the procedure is provided in Section 7.1 of the document titled "EPA Simulation Calculation Notes.pdf". While this document has been submitted previously, it is provided on the enclosed CD for ease of reference. Further detailed explanation is provided below.

[redacted]

CONFIDENTIAL BUSINESS INFORMATION

[redacted]

2. **The xlsx format workbook shown in Appendix E "Results Summary Table" (this is shown in "EPA Simulation Calculation Notes.pdf")**

   See file titled "Peak Flash Calculation Summary.xlsx" on the enclosed CD.

3. **Input data and calculation procedure used to determine flow capacity of the vapor capture system for both single-tank and multi-tank systems (Column R of EPA Workbook.xlsx). Please provide sample calculations.**

A general description of the procedure is provided in Section 7.3 and Appendix D of "EPA Simulation Calculation Notes.pdf". The capacity of the vapor capture system is independent of whether the system is single-tank or multi-tank as the capacity is defined by the physical characteristics of the capture piping. [redacted]

4. **Input data used to calculate the flow capacity of the vapor capture piping using the PIPE utility of HYSIS (e.g., effective pipe length, data used to assess the effective pipe length, roughness factor, etc).**

CONFIDENTIAL BUSINESS INFORMATION

[redacted]

5. **Description of the procedure used to determine the frequency, volume and duration of liquid dumping events for the individual separators (i.e., indicate which values were measured and which values, if any, were estimated and, if estimated, what was the basis for these estimations).**

[redacted]

6. **Explain the purpose of using US EPA TANKS and how the results of those simulations have been used in populating EPA Workbook.xlsx.**

Column Q of EPA Workbook.xlsx requested "Quantify the peak total emission flow due to flash emissions attributed with liquid dump events from the pressurized vessel upstream of the condensate storage tanks, along with w/b/s emissions. [cubic feet/sec]" Since the HYSYS modeling does not provide w/b/s (working/breathing/standing) emissions, [redacted]

7. **The make, model, and specifications (including the complete data sheet and performance curve) of the backpressure valve used on the vapor collection line to each flare, and a description of how the flow capacity of this device was considered.**

Please see the attached file, "POA-250AV_curve.pdf" as well as "POA-250AV Cut Sheet.pdf". [redacted]

As part of this supplemental EPA request, [redacted]

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[redacted]

Mr. Dana Stotsky
February 27, 2014

CONFIDENTIAL BUSINESS INFORMATION

STATEMENT OF CERTIFICATION

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my personal inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for knowingly submitting false statements, and information, including the possibility of fines or imprisonment pursuant to section 113(c)(2) of the Act and 18 U.S.C. §§ 1001, 1341, and 1505.

[redacted]

Vice President, DJ Basin
(Title)

February 27, 2014
(Date)